STATISTICAL REVIEW OF COUNTING ACCELEROMETER DATA FOR NAVY AND MARINE FLEET AIRCRAFT FROM 1 JAN 1962 TO 30 JUN 1982

Warren J. Williams
Aircraft and Crew Systems Technology Directorate
NAVAL AIR DEVELOPMENT CENTER
Warminster, Pennsylvania 18974

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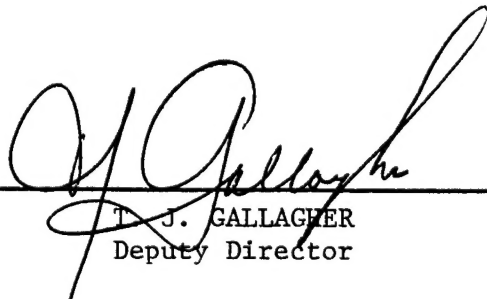NAVAL AIR SYSTEMS COMMAND
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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This report is a specialized summary of normal acceleration data recorded by counting accelerometers. Data are separated by calendar time and mission category. Only data reported in the counting accelerometer program are included.

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SUMMARY

This is a semiannual progress report, and it presents a specialized summary of the data in the counting accelerometer program. Statistics describing Navy and Marine aircraft cumulative g-count exceedances are calculated and tabulated. These tabulations are separated by calendar time and into four major categories of Fleet experience: Navy Training, Navy Combat, Marine Training, and Marine Combat.

Load rate distributions in counts per 1000 hours are calculated for all g-levels. Distribution statistics (mean, standard deviation, and skewness) are presented for most models.

SPECIAL NOTES

1. This report supersedes and replaces all previous issues of this semiannual report. Previous issue was Report Control Symbol NADC 13920-2, dated 1 May 1982.

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NOTE 1: Transducer Load Levels (6, 7, 8.5, 10g)
NOTE 2: Transducer Load Levels (4, 5, 6, 7g)

LIST OF SYMBOLS

MEAN OR $\overline{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS

STD DEV OR S   STANDARD DEVIATION OR CUMULATIVE COUNTS PER 1000 HOURS

SKEWNESS OR A_3 SKEWNESS OF LOAD RATE DISTRIBUTION

*   NO DATA IN THIS CATEGORY

**   INSUFFICIENT DATA IN THIS CATEGORY

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INTRODUCTION

The NAVAIRDEVCEN (Naval Air Development Center) is engaged in various flight
maneuver-loads programs as assigned by the Naval Air Systems Command. One
of these is the counting accelerometer program, and under this program data
have been collected and reported since 1955.

The primary purpose of this program is to provide the flight load history
of individual Navy and Marine aircraft. Other purposes include, but are
not limited to, the comparison of operational loads environment with
structural design requirements, the comparison of load histories of one
model with another, and the determination of expected loads environment
of future models. More recently, however, these data are used as the major
input in the NAVAIRDEVCEN Aircraft Structural Appraisal of Fatigue Effects
Program in estimating structural fatigue damage for those aircraft which
do not have counting accelerometer data.

DISCUSSION

This is a semi-annual progress report. Included are statistical summaries of counting accelerometer data for all Navy and Marine aircraft. In-service models appear in the main text. Out-of-service models or models which have not reported counting accelerometer data during the previous 12 months appear in Appendix A. The summary for each out-of-service model is its final summary. New models are added as their counting accelerometer data becomes available.

For each model, the following statistics are presented: (See Appendix B for the statistical procedures.)

$\bar{x}$ - the estimated mean load exceedances (counts at 1000 flt. hrs.) for each g-level recorded on the counting accelerometer.

S - estimated standard deviation (counts at 1000 flt. hrs.) of the load exceedances for each g-level.

A_3 - estimated skewness factor for the load exceedance distribution.

Two statistical summaries describing cumulative g-count exceedances and flight hours for each currently operational model are presented:

1. The first summary includes all quality-control accepted data reported in the time period comprising the terminal date of this report and the 12 months preceding that date.

2. The second includes all quality-control accepted data reported in the counting accelerometer program from the day each airplane was delivered for service to the terminal date of this report.

The first summary, which includes only the most recent 12 months, shows an indication of a model's current severity of usage. The second summary describes the severity of loads experienced by all airplanes of each model since acceptance. A comparison of the first summary with the second shows whether current usage for any model is more or less severe than usage over its full lifetime.

A further breakdown by mission category is provided for each airplane model in both of the aforementioned summaries. These categories are defined as follows:

1. Navy Training - an airplane in a Navy squadron assigned to a non-combat zone. (This includes all Navy airplanes not classified as being in a combat zone.)

2. Navy Combat - an airplane in a Navy squadron assigned to a combat zone.

3. Marine Training - an airplane in a Marine squadron assigned to a non-combat zone. (This includes all Marine airplanes not classified as being in a combat zone.)

4. Marine Combat - an airplane in a Marine squadron assigned to a combat zone.

The statistics for the A-4F Blue Angels are separated into solo aircraft and diamond formation aircraft. In the subsequent tables, the total flight hours shown for a given model are the sum of the hours reported for each category. However, summing the number of airplanes reported in each category can result in a number exceeding the total aircraft, because the same airplane may have seen service in two or more categories. Its data were separated for calculation of statistics for each respective category.

Some general statistical observations for fleet-wide loads data are the following:

1. The load exceedance distribution for many of the aircraft models is non-normal (particularly asymmetrical) at all the g-levels recorded. In general, the degree of asymmetry increases with increasing g-level.

2. The scatter measure $\frac{S}{\bar{x}}$ (coefficient of variation) increases with higher g-levels.

3. For a given g-level, there is more scatter in loads received during training than during combat.

4. Differences exist in loads frequency among various configurations of the same model and various mission categories within the same configuration.

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T A B L E S

    COUNTING ACCELEROMETER DATA ARE SUBJECT TO QUALITY CONTROL
CRITERIA MODIFICATIONS. THUS, IN SUCCEEDING REPORTS, MODEL-
WIDE SUMMARY STATISTICS ARE SUBJECT TO CHANGE EVEN THOUGH A
MODEL MAY NO LONGER BE IN SERVICE.

DATA FROM
7-81 THRU 6-82

MODEL A-4F BLUE ANGELS
----

8 AIRCRAFT   1419 HOURS

SOLO

	PRACTICE	5.0G	6.0G	7.0G	8.0G
7 AIRCRAFT	MEAN	7702.00	1975.00	239.00	30.00
369 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	SHOW	5.0G	6.0G	7.0G	8.0G
5 AIRCRAFT	MEAN	14258.00	4067.00	607.00	124.00
89 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

DIAMOND

	PRACTICE	5.0G	6.0G	7.0G	8.0G
8 AIRCRAFT	MEAN	900.00	186.00	10.00	1.00
787 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	SHOW	5.0G	6.0G	7.0G	8.0G
6 AIRCRAFT	MEAN	2101.00	608.00	63.00	11.00
174 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

ALL DATA
THRU 6-82

MODEL A-4F BLUE ANGELS
----

11 AIRCRAFT   12562 HOURS

SOLO

	PRACTICE	5.0G	6.0G	7.0G	8.0G
11 AIRCRAFT	MEAN	7310.00	1708.00	219.00	32.00
3143 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	SHOW	5.0G	6.0G	7.0G	8.0G
11 AIRCRAFT	MEAN	14004.00	4573.00	790.00	118.00
846 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

DIAMOND

	PRACTICE	5.0G	6.0G	7.0G	8.0G
11 AIRCRAFT	MEAN	1183.00	285.00	51.00	7.00
6747 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	SHOW	5.0G	6.0G	7.0G	8.0G
10 AIRCRAFT	MEAN	2402.00	772.00	174.00	33.00
1826 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MODEL A-3B
----

1 AIRCRAFT   89 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G

		TRAINING	2.0G	2.5G	3.0G	3.5G
1 AIRCRAFT		MEAN	11.21	.00	.00	.00
89 HOURS		STD DEV	**	**	**	**
		SKEWNESS	**	**	**	**

		COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT		MEAN	*	*	*	*
0 HOURS		STD DEV	*	*	*	*
		SKEWNESS	*	*	*	*

MARINE

		TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT		MEAN	*	*	*	*
0 HOURS		STD DEV	*	*	*	*
		SKEWNESS	*	*	*	*

		COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT		MEAN	*	*	*	*
0 HOURS		STD DEV	*	*	*	*
		SKEWNESS	*	*	*	*

MODEL A-3B
----

80 AIRCRAFT   65970 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
80 AIRCRAFT	MEAN	709.66	173.40	50.86	7.79
57175 HOURS	STD DEV	403.62	113.83	37.07	9.66
	SKEWNESS	1.61	.89	.93	2.63

	COMBAT	2.0G	2.5G	3.0G	3.5G
25 AIRCRAFT	MEAN	564.20	121.21	27.39	5.04
8795 HOURS	STD DEV	249.09	75.35	25.68	6.67
	SKEWNESS	1.11	.98	1.64	2.05

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL KA-3B
----

7 AIRCRAFT   1427 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
7 AIRCRAFT MEAN	82.83	26.03	4.73	.00
1427 HOURS STD DEV	41.69	13.10	2.38	.00
SKEWNESS	.17	.17	.17	I

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL KA-3B
----

51 AIRCRAFT   51831 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

50 AIRCRAFT	MEAN	80.58	11.40	2.79	.61
48803 HOURS	STD DEV	136.77	16.88	4.25	1.67
	SKEWNESS	2.15	1.47	1.50	4.08

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

11 AIRCRAFT	MEAN	172.44	30.93	5.69	.19
3028 HOURS	STD DEV	47.42	17.09	5.41	.59
	SKEWNESS	.51	1.14	.88	2.69

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL A-4F
----

30 AIRCRAFT   4889 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
30 AIRCRAFT	MEAN	723.85	123.02	22.34	4.66
4889 HOURS	STD DEV	413.25	83.19	16.45	4.34
	SKEWNESS	1.09	1.60	2.08	3.68

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL A-4F
----

75 AIRCRAFT   68683 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
75 AIRCRAFT	MEAN	576.64	90.24	12.14	3.08
58314 HOURS	STD DEV	335.81	86.70	28.74	11.76
	SKEWNESS	.65	1.34	3.82	3.95

	COMBAT	5.0G	6.0G	7.0G	8.0G
24 AIRCRAFT	MEAN	506.23	151.12	22.07	2.29
5983 HOURS	STD DEV	114.42	40.87	7.99	1.65
	SKEWNESS	-.20	.42	.25	1.22

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
13 AIRCRAFT	MEAN	748.95	136.85	15.68	3.56
4386 HOURS	STD DEV	240.08	61.79	12.93	4.76
	SKEWNESS	-.70	-.42	1.52	2.48

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL EA-4F
----

3 AIRCRAFT   734 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
3 AIRCRAFT MEAN	41.31	5.09	.00	.00
734 HOURS STD DEV	**	**	**	**
SKEWNESS	**	**	**	**

COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL EA-4F
----

4 AIRCRAFT   8609 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
4 AIRCRAFT	MEAN	88.09	11.46	1.40	.00
8609 HOURS	STD DEV	122.33	17.06	1.65	.00
	SKEWNESS	-.02	.00	.03	I

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL TA-4F
----

14 AIRCRAFT   3160 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
	----	----	----	----

		5.0G	6.0G	7.0G	8.0G
10 AIRCRAFT	MEAN	480.27	48.39	1.75	.23
2464 HOURS	STD DEV	239.23	34.56	3.27	.66
	SKEWNESS	1.55	1.77	2.42	2.54

	COMBAT	5.0G	6.0G	7.0G	8.0G
		------	----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
		----	----	----	----
4 AIRCRAFT	MEAN	527.92	10.29	.00	.00
695 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	5.0G	6.0G	7.0G	8.0G
		------	----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL TA-4F
----

166 AIRCRAFT   205555 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
144 AIRCRAFT	MEAN	209.37	28.44	2.11	.32
164971 HOURS	STD DEV	227.82	68.07	4.15	1.06
	SKEWNESS	1.68	7.50	3.31	4.31

	COMBAT	5.0G	6.0G	7.0G	8.0G
8 AIRCRAFT	MEAN	564.76	58.22	3.34	.73
2158 HOURS	STD DEV	149.00	21.08	2.38	.52
	SKEWNESS	-.38	-.64	.97	.38

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
43 AIRCRAFT	MEAN	634.60	75.33	6.17	.73
38426 HOURS	STD DEV	428.48	95.87	11.35	2.11
	SKEWNESS	1.40	4.29	4.25	5.06

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL TA-4J
----

257 AIRCRAFT   88865 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
257 AIRCRAFT	MEAN	346.60	30.19	3.92	.59
88865 HOURS	STD DEV	252.31	40.91	12.81	2.68
	SKEWNESS	4.00	4.18	9.56	10.44

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL TA-4J
----

379 AIRCRAFT 1049443 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
377 AIRCRAFT	MEAN	293.50	28.15	3.42	.62
1034587 HOURS	STD DEV	308.74	51.51	9.47	3.00
	SKEWNESS	2.94	3.31	3.97	9.05

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
24 AIRCRAFT	MEAN	186.24	10.83	.48	.14
14856 HOURS	STD DEV	67.92	9.32	.76	.34
	SKEWNESS	1.21	1.63	2.26	2.40

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL A-4M
----

79 AIRCRAFT   10656 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
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	TRAINING	5.0G	6.0G	7.0G	8.0G
18 AIRCRAFT	MEAN	352.96	27.31	3.10	.93
881 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
71 AIRCRAFT	MEAN	607.63	56.03	7.64	4.80
9775 HOURS	STD DEV	531.84	69.51	7.52	7.05
	SKEWNESS	6.52	6.02	4.44	5.96

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL A-4M
----

142 AIRCRAFT   122590 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
	----	----	----	----
32 AIRCRAFT MEAN	944.00	130.73	23.73	2.44
7224 HOURS STD DEV	471.57	171.73	37.17	2.63
SKEWNESS	2.04	4.12	4.24	2.26

COMBAT	5.0G	6.0G	7.0G	8.0G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
	----	----	----	----
136 AIRCRAFT MEAN	457.72	46.04	7.22	1.56
115366 HOURS STD DEV	307.92	51.09	10.69	3.81
SKEWNESS	2.41	3.30	2.35	3.71

COMBAT	5.0G	6.0G	7.0G	8.0G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL EA-6A
----

18 AIRCRAFT   3709 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
18 AIRCRAFT	MEAN	172.76	19.61	1.17	.30
3709 HOURS	STD DEV	88.68	15.57	1.02	.51
	SKEWNESS	.89	2.36	1.82	3.35

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL EA-6A
----

25 AIRCRAFT   35874 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
18 AIRCRAFT	MEAN	99.08	13.02	.70	.14
7283 HOURS	STD DEV	118.39	21.29	1.26	.37
	SKEWNESS	1.58	2.68	2.22	3.42

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
22 AIRCRAFT	MEAN	53.51	4.45	.34	.00
28153 HOURS	STD DEV	39.89	4.64	.61	.19
	SKEWNESS	.97	1.53	.83	4.37

	COMBAT	4.0G	5.0G	6.0G	7.0G
5 AIRCRAFT	MEAN	10.56	1.51	.00	.00
438 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MODEL EA-6B
----

67 AIRCRAFT   21706 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
60 AIRCRAFT MEAN	152.13	21.99	1.74	.45
17837 HOURS STD DEV	89.37	25.44	3.52	.97
SKEWNESS	1.92	5.28	4.23	3.88

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
14 AIRCRAFT MEAN	243.97	24.29	2.20	.18
3869 HOURS STD DEV	98.86	11.74	2.07	.52
SKEWNESS	.85	.82	1.56	3.16

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL EA-6B
----

85 AIRCRAFT   144770 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
83 AIRCRAFT	MEAN	137.48	18.56	1.40	.29
130915 HOURS	STD DEV	100.41	22.81	3.41	.85
	SKEWNESS	1.33	2.35	2.62	2.88

	COMBAT	4.0G	5.0G	6.0G	7.0G
1 AIRCRAFT	MEAN	140.85	.00	.00	.00
7 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
14 AIRCRAFT	MEAN	191.96	16.61	1.19	.41
13848 HOURS	STD DEV	81.17	10.63	2.46	1.05
	SKEWNESS	.17	.68	1.46	2.48

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL KA-6D
----

51 AIRCRAFT   13247 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
MEAN	30.38	2.50	.27	.05
STD DEV	40.65	3.18	1.10	.83
SKEWNESS	4.62	2.23	4.06	6.92

51 AIRCRAFT

13247 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

ALL DATA
THRU 6-82

MODEL KA-6D
----

77 AIRCRAFT   138593 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
77 AIRCRAFT	MEAN	26.63	2.42	.39	.12
130138 HOURS	STD DEV	61.78	4.85	1.19	.66
	SKEWNESS	5.11	3.45	2.34	4.80

	COMBAT	4.0G	5.0G	6.0G	7.0G
33 AIRCRAFT	MEAN	22.59	3.75	.87	.00
8455 HOURS	STD DEV	16.38	4.20	1.72	.00
	SKEWNESS	1.05	2.39	3.51	I

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL A-6E
----

218 AIRCRAFT   55944 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
167 AIRCRAFT MEAN	891.99	200.86	25.15	2.48
39211 HOURS STD DEV	324.47	126.55	19.97	3.77
SKEWNESS	2.82	4.67	2.31	4.00

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
66 AIRCRAFT MEAN	1462.67	356.89	48.62	4.27
16733 HOURS STD DEV	398.33	162.68	33.57	5.38
SKEWNESS	.60	3.08	3.30	3.58

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL A-6E
----

356 AIRCRAFT   425430 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
326 AIRCRAFT	MEAN	1031.53	237.16	26.13	2.84
316753 HOURS	STD DEV	431.78	146.62	25.28	4.03
	SKEWNESS	.80	1.28	2.07	2.43

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
113 AIRCRAFT	MEAN	863.27	177.05	23.86	2.93
108677 HOURS	STD DEV	381.78	122.79	26.31	4.51
	SKEWNESS	.76	1.59	1.73	2.18

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

DATA FROM
7-81 THRU 6-82

MODEL A-7A
----

2 AIRCRAFT   151 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
2 AIRCRAFT	MEAN	1111.69	360.13	.00	.00
151 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL A-7A
----

194 AIRCRAFT   318148 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
194 AIRCRAFT	MEAN	1061.53	244.00	29.11	2.70
253473 HOURS	STD DEV	467.77	169.18	37.17	4.61
	SKEWNESS	.35	1.93	4.45	3.59

	COMBAT	5.0G	6.0G	7.0G	8.0G
133 AIRCRAFT	MEAN	765.97	242.17	32.86	2.62
64675 HOURS	STD DEV	157.84	77.57	15.90	2.44
	SKEWNESS	.21	1.61	.86	1.77

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

DATA FROM
7-81 THRU 6-82

MODEL A-7B
----

65 AIRCRAFT   14288 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
65 AIRCRAFT MEAN	1319.83	299.11	29.56	2.07
14288 HOURS STD DEV	309.13	128.68	25.25	2.29
SKEWNESS	.65	1.73	3.09	2.30

COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL A-7B
----

122 AIRCRAFT   153950 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
121 AIRCRAFT	MEAN	1083.11	294.52	39.29	6.58
145131 HOURS	STD DEV	375.19	167.16	49.83	13.39
	SKEWNESS	.81	1.42	2.17	3.44

COMBAT	5.0G	6.0G	7.0G	8.0G
28 AIRCRAFT	MEAN	1297.37	434.41	59.01	4.19
8820 HOURS	STD DEV	349.87	119.17	33.47	4.66
	SKEWNESS	.14	.83	2.97	3.53

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL A-7C
----

5 AIRCRAFT   736 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
5 AIRCRAFT	MEAN	261.41	46.41	1.21	.00
736 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL A-7C
----

47 AIRCRAFT   48286 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
	--------	----	----	----	----

46 AIRCRAFT	MEAN	924.65	181.18	20.90	2.83
40700 HOURS	STD DEV	711.68	195.95	42.53	6.48
	SKEWNESS	.62	1.85	3.57	3.98

COMBAT	5.0G	6.0G	7.0G	8.0G
	------	----	----	----	----

22 AIRCRAFT	MEAN	660.69	151.23	17.98	2.11
7587 HOURS	STD DEV	175.62	43.50	18.49	12.62
	SKEWNESS	1.49	.70	3.53	4.31

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
	--------	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	5.0G	6.0G	7.0G	8.0G
	------	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL TA-7C
----

43 AIRCRAFT   11348 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
MEAN	766.43	87.56	6.18	3.51
STD DEV	352.18	49.68	8.94	8.54
SKEWNESS	.57	1.08	4.97	5.77

43 AIRCRAFT

11348 HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

ALL DATA
THRU 6-82

MODEL TA-7C
----

59 AIRCRAFT   48295 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
59 AIRCRAFT	MEAN	1048.29	175.94	11.18	1.85
48295 HOURS	STD DEV	599.70	133.25	16.46	6.46
	SKEWNESS	-.57	.17	2.47	4.24

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL A-7E
----

312 AIRCRAFT   96974 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
312 AIRCRAFT	MEAN	578.89	83.38	7.44	1.63
96974 HOURS	STD DEV	287.28	67.11	9.70	3.43
	SKEWNESS	2.02	2.80	3.85	4.63

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL A-7E
----

462 AIRCRAFT   808453 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
462 AIRCRAFT	MEAN	643.62	97.48	7.29	1.25
800285 HOURS	STD DEV	356.35	95.61	16.51	3.30
	SKEWNESS	1.75	3.75	10.00	3.89

	COMBAT	5.0G	6.0G	7.0G	8.0G
37 AIRCRAFT	MEAN	315.03	61.92	4.84	.68
8168 HOURS	STD DEV	60.51	19.82	2.91	1.06
	SKEWNESS	.04	.26	1.67	4.35

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

DATA FROM
7-81 THRU 6-82

MODEL C-2A
----

5 AIRCRAFT   956 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

5 AIRCRAFT	MEAN	68.94	3.18	.76	.00
956 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL C-2A
----

16 AIRCRAFT   58214 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
16 AIRCRAFT	MEAN	44.59	12.31	4.90	1.22
58214 HOURS	STD DEV	58.53	24.93	12.14	3.52
	SKEWNESS	2.11	2.31	2.15	1.94

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL QF-4B
----

4 AIRCRAFT   143 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
4 AIRCRAFT	MEAN	411.70	89.25	7.92	.00
143 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL QF-4B
----

13 AIRCRAFT   1319 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
13 AIRCRAFT	MEAN	795.63	240.41	53.93	15.60
1319 HOURS	STD DEV	183.65	87.58	14.30	5.47
	SKEWNESS	2.08	2.67	.76	.21

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL RF-4B
----

20 AIRCRAFT   4411 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
	--------	----	----	----	----
13 AIRCRAFT	MEAN	1993.41	748.81	191.45	25.69
952 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	4.0G	5.0G	6.0G	7.0G
	------	----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
	--------	----	----	----	----
16 AIRCRAFT	MEAN	1131.66	418.08	85.75	17.52
3459 HOURS	STD DEV	222.88	104.77	26.98	6.61
	SKEWNESS	-.25	.48	.38	.61

	COMBAT	4.0G	5.0G	6.0G	7.0G
	------	----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL RF-4B
----

46 AIRCRAFT   88587 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
MEAN	1957.18	734.76	187.67	25.16
STD DEV	336.02	134.24	42.52	6.90
SKEWNESS	-.40	-.51	-.00	.36

15 AIRCRAFT

1041 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
MEAN	469.92	126.25	30.13	7.03
STD DEV	341.55	109.31	32.83	11.50
SKEWNESS	.41	.79	1.29	2.81

46 AIRCRAFT

79531 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
MEAN	1087.24	210.75	41.81	8.94
STD DEV	405.94	78.46	26.06	5.37
SKEWNESS	1.58	1.80	2.18	1.10

16 AIRCRAFT

8015 HOURS

MODEL F-4J
----

105 AIRCRAFT   14861 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
75 AIRCRAFT	MEAN	1494.69	418.08	67.31	7.70
6262 HOURS	STD DEV	441.97	150.01	34.81	9.67
	SKEWNESS	1.88	1.32	2.13	4.14

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
62 AIRCRAFT	MEAN	3738.81	1066.17	142.75	11.54
8599 HOURS	STD DEV	744.43	263.34	44.01	7.66
	SKEWNESS	.09	.07	.62	1.77

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL F-4J
----

470 AIRCRAFT   777631 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
450 AIRCRAFT	MEAN	2745.44	1023.71	298.62	66.81
470489 HOURS	STD DEV	1667.70	782.73	309.67	93.87
	SKEWNESS	.92	.99	1.64	2.49

	COMBAT	4.0G	5.0G	6.0G	7.0G
177 AIRCRAFT	MEAN	1115.45	457.87	137.67	34.53
53574 HOURS	STD DEV	340.65	157.45	64.45	36.91
	SKEWNESS	1.84	2.86	2.68	4.38

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
279 AIRCRAFT	MEAN	4234.87	1529.99	434.29	112.66
243638 HOURS	STD DEV	1494.70	624.56	277.85	108.04
	SKEWNESS	1.08	1.13	1.54	2.11

	COMBAT	4.0G	5.0G	6.0G	7.0G
50 AIRCRAFT	MEAN	2807.54	1311.42	412.74	76.82
9931 HOURS	STD DEV	619.72	264.73	169.96	47.34
	SKEWNESS	2.57	2.24	1.89	1.61

MODEL EF-4J
----

1 AIRCRAFT   91 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
		----	----	----	----
1 AIRCRAFT	MEAN	350.49	.00	.00	.00
91 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	4.0G	5.0G	6.0G	7.0G
		----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
		----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
		----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL EF-4J
----

2 AIRCRAFT   532 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
2 AIRCRAFT	MEAN	413.72	64.10	10.06	.00
532 HOURS	STD DEV	8.34	.21	1.78	.00
	SKEWNESS	.44	-.44	.44	I

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL F-4N
----

111 AIRCRAFT   14605 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
85 AIRCRAFT — MEAN	2318.35	828.33	184.15	27.31
9373 HOURS — STD DEV	712.11	267.55	62.48	17.36
SKEWNESS	.91	1.21	1.11	3.71

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT — MEAN	*	*	*	*
0 HOURS — STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
37 AIRCRAFT — MEAN	4348.85	1311.49	204.95	15.70
5233 HOURS — STD DEV	472.61	187.43	34.01	8.15
SKEWNESS	1.12	.64	.37	2.44

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT — MEAN	*	*	*	*
0 HOURS — STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL F-4N
----

216 AIRCRAFT   144093 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
178 AIRCRAFT	MEAN	2958.86	1234.77	340.36	60.91
93512 HOURS	STD DEV	973.16	451.18	153.58	39.39
	SKEWNESS	1.77	1.34	1.03	1.68

	COMBAT	4.0G	5.0G	6.0G	7.0G
7 AIRCRAFT	MEAN	1282.91	537.08	162.76	35.94
189 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
80 AIRCRAFT	MEAN	3973.98	1338.40	285.08	41.12
50392 HOURS	STD DEV	845.73	408.11	169.12	40.91
	SKEWNESS	1.48	2.10	2.32	2.41

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL F-4S
----

157 AIRCRAFT   28912 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
73 AIRCRAFT	MEAN	3038.33	1229.49	279.50	38.54
13984 HOURS	STD DEV	818.15	352.88	91.47	20.16
	SKEWNESS	.53	.65	1.74	3.39

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
85 AIRCRAFT	MEAN	3356.52	987.41	150.73	14.28
14928 HOURS	STD DEV	499.33	183.24	47.94	11.77
	SKEWNESS	.18	.33	2.19	5.41

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL F-4S
----

167 AIRCRAFT   67653 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
80 AIRCRAFT	MEAN	3268.87	1302.93	313.65	46.97
24669 HOURS	STD DEV	1004.20	447.85	142.45	33.33
	SKEWNESS	.57	1.06	2.46	3.02

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
91 AIRCRAFT	MEAN	3863.58	1218.65	207.64	24.04
42984 HOURS	STD DEV	631.31	339.20	110.17	26.05
	SKEWNESS	.29	1.83	3.10	4.43

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

DATA FROM
7-81 THRU 6-82

MODEL RF-8G
----

21 AIRCRAFT   4119 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
21 AIRCRAFT MEAN	581.10	179.06	50.43	6.62
4119 HOURS STD DEV	291.73	113.24	38.81	11.19
SKEWNESS	.90	1.21	1.74	2.59

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL RF-8G
----

54 AIRCRAFT   62192 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

54 AIRCRAFT	MEAN	419.79	122.89	27.40	4.23
61000 HOURS	STD DEV	360.72	123.20	30.10	8.69
	SKEWNESS	1.01	1.19	1.50	3.68

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

11 AIRCRAFT	MEAN	1481.32	391.60	63.37	8.37
1192 HOURS	STD DEV	387.16	90.25	26.29	5.98
	SKEWNESS	1.13	1.89	1.75	1.30

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL DF-8J
----

0 AIRCRAFT   0 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL DF-8J
----

5 AIRCRAFT   1734 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
5 AIRCRAFT	MEAN	809.72	190.33	34.35	5.72
1734 HOURS	STD DEV	267.49	60.42	22.29	5.66
	SKEWNESS	-.93	-1.12	.85	1.02

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL P-3A
----

92 AIRCRAFT   30196 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G

	TRAINING	2.0G	2.5G	3.0G	3.5G
92 AIRCRAFT	MEAN	2.26	.14	.08	.00
30196 HOURS	STD DEV	3.24	.79	.73	.00
	SKEWNESS	3.53	7.57	9.38	I

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL P-3A
----

150 AIRCRAFT   1135850 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
150 AIRCRAFT MEAN	13.26	1.16	.15	.02
1046195 HOURS STD DEV	56.51	3.98	1.30	.23
SKEWNESS	8.35	5.93	8.87	6.65

COMBAT	2.0G	2.5G	3.0G	3.5G
99 AIRCRAFT MEAN	12.40	1.10	.09	.01
89654 HOURS STD DEV	15.05	2.38	.41	.11
SKEWNESS	2.81	2.41	3.95	9.74

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL EP-3A
----

3 AIRCRAFT   1071 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
3 AIRCRAFT MEAN	.00	.00	.00	.00
1071 HOURS STD DEV	.00	.00	.00	.00
SKEWNESS	I	I	I	I

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL EP-3A
----

3 AIRCRAFT   6013 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
3 AIRCRAFT MEAN	.51	.42	.14	.00
6013 HOURS STD DEV	1.85	1.25	.42	.00
SKEWNESS	.41	.39	.39	I

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL RP-3A
----

4 AIRCRAFT   2304 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----
4 AIRCRAFT MEAN	2.58	.64	.00	.00
2304 HOURS STD DEV	1.72	.43	.00	.00
SKEWNESS	-.20	-.20	I	I

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL RP-3A
----

4 AIRCRAFT   18829 HOURS

NAVY

		2.0G	2.5G	3.0G	3.5G
	TRAINING				
4 AIRCRAFT	MEAN	2.80	.27	.13	.00
18829 HOURS	STD DEV	5.51	.79	.39	.00
	SKEWNESS	.15	.11	.19	I

		2.0G	2.5G	3.0G	3.5G
	COMBAT				
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

		2.0G	2.5G	3.0G	3.5G
	TRAINING				
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

		2.0G	2.5G	3.0G	3.5G
	COMBAT				
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL P-3B
----

106 AIRCRAFT   60476 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
106 AIRCRAFT	MEAN	3.40	.41	.08	.01
60476 HOURS	STD DEV	4.91	1.07	.25	.13
	SKEWNESS	3.10	5.60	4.62	10.05

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL P-3B
----

127 AIRCRAFT 1174643 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
127 AIRCRAFT	MEAN	7.21	.69	.11	.03
1087512 HOURS	STD DEV	25.30	3.41	.99	.51
	SKEWNESS	3.23	5.73	6.00	8.20

	COMBAT	2.0G	2.5G	3.0G	3.5G
78 AIRCRAFT	MEAN	4.90	.44	.03	.01
87131 HOURS	STD DEV	5.51	.82	.15	.11
	SKEWNESS	.66	2.77	5.63	8.38

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL EP-3B

3 AIRCRAFT   1909 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	10.23	1.07	.55	.00
STD DEV	9.38	4.36	4.39	.00
SKEWNESS	.85	.88	.91	I

3 AIRCRAFT — MEAN row
1909 HOURS — STD DEV row

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT
0 HOURS

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT
0 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT
0 HOURS

MODEL EP-3B
----

3 AIRCRAFT   31815 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
3 AIRCRAFT	MEAN	2.34	.06	.02	.00
23038 HOURS	STD DEV	3.88	1.53	1.53	.00
	SKEWNESS	.92	.92	.94	I

	COMBAT	2.0G	2.5G	3.0G	3.5G
2 AIRCRAFT	MEAN	3.95	.54	.00	.00
8778 HOURS	STD DEV	4.89	.97	.00	.00
	SKEWNESS	-.26	-.26	I	I

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL P-3C
----

197 AIRCRAFT   115372 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
197 AIRCRAFT	MEAN	5.91	1.01	.32	.25
115372 HOURS	STD DEV	9.89	4.45	2.22	2.18
	SKEWNESS	3.09	8.47	8.31	8.72

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL P-3C
----

221 AIRCRAFT   775887 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
221 AIRCRAFT	MEAN	3.22	.37	.08	.04
775552 HOURS	STD DEV	10.25	2.71	1.18	.90
	SKEWNESS	3.47	5.10	6.74	8.68

	COMBAT	2.0G	2.5G	3.0G	3.5G
2 AIRCRAFT	MEAN	.00	.00	.00	.00
335 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

DATA FROM
7-81 THRU 6-82

MODEL EP-3E
----

9 AIRCRAFT   5363 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	2.61	.34	.15	.00
STD DEV	2.70	.98	.44	.00
SKEWNESS	.70	1.81	2.15	I

9 AIRCRAFT

5363 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

ALL DATA
THRU 6-82

MODEL EP-3E
----

10 AIRCRAFT   56147 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	1.75	.13	.07	.00
STD DEV	1.30	.91	.82	.00
SKEWNESS	-.98	1.79	2.49	I

10 AIRCRAFT (MEAN row), 56147 HOURS (STD DEV row)

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT (MEAN row), 0 HOURS (STD DEV row)

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT (MEAN row), 0 HOURS (STD DEV row)

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT (MEAN row), 0 HOURS (STD DEV row)

MODEL ES-2D
----

0 AIRCRAFT   0 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL ES-2D
----

7 AIRCRAFT   12105 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
7 AIRCRAFT MEAN	5.27	.67	.20	.00
12105 HOURS STD DEV	10.70	.98	.30	.00
SKEWNESS	.88	.41	.03	I

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL S-3A
----

120 AIRCRAFT   40244 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G

120 AIRCRAFT	MEAN	1224.22	473.80	171.54	52.44
40244 HOURS	STD DEV	411.71	184.50	79.80	26.54
	SKEWNESS	1.41	1.64	1.78	1.34

COMBAT	2.0G	2.5G	3.0G	3.5G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL S-3A
----

178 AIRCRAFT   260513 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
178 AIRCRAFT	MEAN	1254.89	464.36	151.83	42.49
260513 HOURS	STD DEV	637.54	258.67	91.16	30.83
	SKEWNESS	1.35	1.01	.03	.09

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL T-2C
----

169 AIRCRAFT   70483 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
169 AIRCRAFT	MEAN	184.45	18.30	1.71	.60
70483 HOURS	STD DEV	234.39	31.54	3.18	1.87
	SKEWNESS	6.16	10.64	4.87	5.44

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL T-2C
----

215 AIRCRAFT   475875 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
215 AIRCRAFT	MEAN	144.88	15.77	1.89	.30
475875 HOURS	STD DEV	191.80	25.20	3.81	1.35
	SKEWNESS	2.04	4.07	2.79	3.76

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL T-28B
----

13 AIRCRAFT   6617 HOURS

NAVY

	TRAINING	3.0G	4.0G	5.0G	6.0G
13 AIRCRAFT	MEAN	950.56	36.44	2.92	.16
6617 HOURS	STD DEV	901.75	19.45	1.67	.39
	SKEWNESS	2.23	.87	.07	2.73

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA
THRU 6-82

MODEL T-28B
----

98 AIRCRAFT   505235 HOURS

NAVY

	TRAINING	3.0G	4.0G	5.0G	6.0G
98 AIRCRAFT	MEAN	384.34	43.91	4.07	.32
505235 HOURS	STD DEV	649.81	107.66	20.57	2.27
	SKEWNESS	.72	2.05	4.76	5.16

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL T-34C
----

169 AIRCRAFT   127501 HOURS

NAVY

TRAINING	3.0G	4.0G	5.0G	6.0G
MEAN	574.98	77.88	4.30	.38
STD DEV	162.63	37.62	5.35	1.03
SKEWNESS	4.71	6.77	6.05	4.34

169 AIRCRAFT
127501 HOURS

COMBAT	3.0G	4.0G	5.0G	6.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT
0 HOURS

MARINE

TRAINING	3.0G	4.0G	5.0G	6.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT
0 HOURS

COMBAT	3.0G	4.0G	5.0G	6.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT
0 HOURS

ALL DATA
THRU 6-82

MODEL T-34C
----

179 AIRCRAFT   383736 HOURS

NAVY

	TRAINING	3.0G	4.0G	5.0G	6.0G
179 AIRCRAFT	MEAN	591.44	82.67	4.53	.65
383736 HOURS	STD DEV	162.75	65.37	7.92	2.46
	SKEWNESS	3.63	7.86	4.07	5.06

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL T-39D
----

5 AIRCRAFT   1269 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	1199.99	80.75	7.90	.00
STD DEV	916.97	51.87	5.06	.00
SKEWNESS	.50	.27	-.05	I

5 AIRCRAFT

1269 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

MODEL T-39D
----

7 AIRCRAFT   11684 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
7 AIRCRAFT	MEAN	776.37	65.37	14.20	5.12
11684 HOURS	STD DEV	1210.42	182.22	50.48	21.84
	SKEWNESS	.31	1.65	1.72	1.73

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL T-44A
----

52 AIRCRAFT   38971 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
52 AIRCRAFT MEAN	46.61	6.72	1.28	.14
38971 HOURS STD DEV	46.52	21.15	5.11	.41
SKEWNESS	5.01	6.59	6.55	3.74

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MODEL T-44A
----

60 AIRCRAFT   157817 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

60 AIRCRAFT	MEAN	31.27	3.24	.63	.11
157817 HOURS	STD DEV	29.70	11.83	3.65	.37
	SKEWNESS	3.99	6.81	6.91	2.29

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL AV-8A
----

22 AIRCRAFT   1992 HOURS

MARINE

	TRAINING	-1.5G	-.5G	.25G	2.5G
22 AIRCRAFT	MEAN	4.14	87.95	2797.95	15288.20
1992 HOURS	STD DEV	4.94	51.52	1497.34	2514.68
	SKEWNESS	3.69	3.00	2.39	.72

		3.5G	5.0G	7.0G	8.0G
22 AIRCRAFT	MEAN	7718.55	1339.06	11.07	.44
1992 HOURS	STD DEV	1214.81	238.29	7.17	.71
	SKEWNESS	.82	.51	2.09	4.02

MARINE

	COMBAT	-1.5G	-.5G	.25G	2.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

		3.5G	5.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL AV-8A
----

96 AIRCRAFT   62924 HOURS

MARINE

TRAINING	-1.5G	-.5G	.25G	2.5G
96 AIRCRAFT MEAN	4.07	45.71	1361.05	11906.19
62924 HOURS STD DEV	3.33	28.53	619.23	1937.76
SKEWNESS	1.37	2.92	4.08	.16

	3.5G	5.0G	7.0G	8.0G
96 AIRCRAFT MEAN	6382.86	1514.01	32.99	3.32
62924 HOURS STD DEV	1182.66	349.61	20.72	2.66
SKEWNESS	.32	-.13	2.06	1.52

MARINE

COMBAT	-1.5G	-.5G	.25G	2.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

	3.5G	5.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

DATA FROM
7-81 THRU 6-82

MODEL TAV-8A
----

4 AIRCRAFT   744 HOURS

MARINE

	TRAINING	-1.5G	-.5G	.25G	2.5G
4 AIRCRAFT	MEAN	1.39	8.23	356.23	7237.84
744 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

		3.5G	5.0G	7.0G	8.0G
4 AIRCRAFT	MEAN	3253.04	208.06	1.86	.00
744 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	COMBAT	-1.5G	-.5G	.25G	2.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

		3.5G	5.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MODEL TAV-8A
----

8 AIRCRAFT   5223 HOURS

MARINE

	TRAINING	-1.5G	-.5G	.25G	2.5G
8 AIRCRAFT	MEAN	1.61	11.85	404.73	8412.72
5223 HOURS	STD DEV	.90	6.59	70.89	873.45
	SKEWNESS	-.48	.39	-.13	.09

		3.5G	5.0G	7.0G	8.0G
8 AIRCRAFT	MEAN	4101.97	621.44	2.88	.19
5223 HOURS	STD DEV	520.24	168.67	2.66	.43
	SKEWNESS	-.69	-.12	.65	1.78

MARINE

	COMBAT	-1.5G	-.5G	.25G	2.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

		3.5G	5.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

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APPENDIX A

OUT-OF-SERVICE MODELS AND MODELS WHICH HAVE NOT REPORTED
COUNTING ACCELEROMETER DATA DURING THE PREVIOUS 12 MONTHS

ALL DATA

MODEL F-4JBA
----

14 AIRCRAFT   8102 HOURS

	DIAMOND	6.0G	7.0G	8.5G	10.0G
	-------	----	----	----	-----
14 AIRCRAFT	MEAN	502.35	164.78	21.16	1.73
5418 HOURS	STD DEV	118.81	82.68	13.94	1.23
	SKEWNESS	.22	.78	.49	.53

	SOLO	6.0G	7.0G	8.5G	10.0G
	----	----	----	----	-----
10 AIRCRAFT	MEAN	2220.24	797.59	143.85	12.38
2684 HOURS	STD DEV	573.11	298.17	95.53	18.68
	SKEWNESS	-.30	-.05	1.55	2.40

		6.0G	7.0G	8.5G	10.0G
		----	----	----	-----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

		6.0G	7.0G	8.5G	10.0G
		----	----	----	-----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-11ABA
----

12 AIRCRAFT   3744 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
12 AIRCRAFT	MEAN	5414.80	1826.99	520.71	188.84
3744 HOURS	STD DEV	2263.48	740.91	208.44	86.14
	SKEWNESS	-.39	-.65	-.79	-.37

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-11ABA
----

11 AIRCRAFT   4400 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
11 AIRCRAFT	MEAN	740.74	192.71	12.43	3.88
4400 HOURS	STD DEV	217.97	62.76	7.33	7.05
	SKEWNESS	.19	.26	.95	2.32

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-1H
----

28 AIRCRAFT   7290 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
22 AIRCRAFT	MEAN	263.05	94.29	6.31	.00
374 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	4.0G	5.0G	6.0G	7.0G
28 AIRCRAFT	MEAN	322.42	89.29	14.84	.00
6916 HOURS	STD DEV	77.52	27.19	6.46	.00
	SKEWNESS	1.14	1.22	1.07	.00

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-1J
----

4 AIRCRAFT   917 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
1 AIRCRAFT	MEAN	.00	.00	.00	.00
32 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	4.0G	5.0G	6.0G	7.0G
4 AIRCRAFT	MEAN	306.82	125.89	17.28	.00
885 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL EKA-3B
----

20 AIRCRAFT   9742 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

19 AIRCRAFT	MEAN	354.19	65.33	21.52	3.53
8334 HOURS	STD DEV	289.18	60.88	23.25	4.26
	SKEWNESS	.85	1.77	1.98	1.96

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

5 AIRCRAFT	MEAN	99.38	6.56	.00	.00
1408 HOURS	STD DEV	52.68	9.15	.00	.00
	SKEWNESS	.71	1.36	.00	.00

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-4B
----

58 AIRCRAFT   23177 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
55 AIRCRAFT	MEAN	681.15	238.03	49.07	7.87
20376 HOURS	STD DEV	358.28	164.65	46.69	9.80
	SKEWNESS	.67	1.04	2.09	2.14

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
8 AIRCRAFT	MEAN	268.45	64.34	10.94	.99
2800 HOURS	STD DEV	245.06	92.00	18.99	1.89
	SKEWNESS	.55	1.39	1.73	1.67

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL TA-4B
----

10 AIRCRAFT   3976 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G

10 AIRCRAFT

3976 HOURS

	4.0G	5.0G	6.0G	7.0G
MEAN	745.68	292.32	83.97	13.39
STD DEV	480.64	221.15	68.00	17.49
SKEWNESS	-.03	.26	.92	1.49

COMBAT	4.0G	5.0G	6.0G	7.0G

0 AIRCRAFT

0 HOURS

	4.0G	5.0G	6.0G	7.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G

0 AIRCRAFT

0 HOURS

	4.0G	5.0G	6.0G	7.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	4.0G	5.0G	6.0G	7.0G

0 AIRCRAFT

0 HOURS

	4.0G	5.0G	6.0G	7.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA

MODEL A-4G
----

16 AIRCRAFT   15502 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
MEAN	1978.65	316.40	36.62	5.30
STD DEV	491.41	110.99	15.52	4.06
SKEWNESS	.10	-.04	.05	.84

16 AIRCRAFT

15502 HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
MEAN	*	*	*	*
STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

0 AIRCRAFT

0 HOURS

ALL DATA

MODEL TA-4G
----

4 AIRCRAFT   4674 HOURS

NAVY

TRAINING	5.0G	6.0G	7.0G	8.0G
4 AIRCRAFT MEAN	780.06	90.24	7.31	.95
4674 HOURS STD DEV	107.06	8.76	2.96	3.05
SKEWNESS	.02	-.38	1.01	1.03

COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA

MODEL A-5A
----

30 AIRCRAFT   11790 HOURS

NAVY

	TRAINING	3.0G	4.0G	5.0G	6.0G
30 AIRCRAFT	MEAN	579.58	128.26	9.04	.89
11790 HOURS	STD DEV	487.22	42.19	4.68	1.00
	SKEWNESS	4.57	.57	.75	1.63

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-5B
----

5 AIRCRAFT   985 HOURS

NAVY

	TRAINING	3.0G	4.0G	5.0G	6.0G
5 AIRCRAFT	MEAN	125.50	13.83	1.01	.00
985 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL RA-5C
----

129 AIRCRAFT   160529 HOURS

NAVY

	TRAINING	3.0G	4.0G	5.0G	6.0G
129 AIRCRAFT	MEAN	198.27	11.94	.88	.16
139664 HOURS	STD DEV	110.59	25.27	1.95	.65
	SKEWNESS	2.43	8.28	2.70	3.44

	COMBAT	3.0G	4.0G	5.0G	6.0G
94 AIRCRAFT	MEAN	931.07	99.95	13.46	.66
20865 HOURS	STD DEV	435.85	70.01	18.99	1.29
	SKEWNESS	3.15	3.41	6.42	3.66

MARINE

	TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-6A
----

416 AIRCRAFT   397673 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
386 AIRCRAFT	MEAN	1275.66	409.52	66.85	5.99
232860 HOURS	STD DEV	455.87	216.84	55.67	8.55
	SKEWNESS	.79	1.70	3.41	7.10

	COMBAT	4.0G	5.0G	6.0G	7.0G
197 AIRCRAFT	MEAN	1081.91	451.75	110.41	13.06
38369 HOURS	STD DEV	267.48	153.44	56.44	7.62
	SKEWNESS	4.34	4.62	3.33	2.05

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
195 AIRCRAFT	MEAN	915.95	227.30	31.57	2.79
100003 HOURS	STD DEV	350.99	133.51	28.49	4.27
	SKEWNESS	.54	1.19	2.32	3.04

	COMBAT	4.0G	5.0G	6.0G	7.0G
77 AIRCRAFT	MEAN	457.85	149.86	23.43	1.37
26440 HOURS	STD DEV	211.51	110.44	21.43	3.45
	SKEWNESS	1.11	2.92	3.29	7.09

ALL DATA

MODEL NA-6A
----

8 AIRCRAFT   5393 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
8 AIRCRAFT	MEAN	106.87	20.74	4.05	1.08
5393 HOURS	STD DEV	92.22	26.43	5.59	1.46
	SKEWNESS	.62	.84	.74	.83

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-6B
----

18 AIRCRAFT   11964 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
18 AIRCRAFT	MEAN	523.51	127.72	17.36	2.84
10043 HOURS	STD DEV	155.98	53.34	14.34	4.97
	SKEWNESS	-.98	-.27	.96	2.28

	COMBAT	4.0G	5.0G	6.0G	7.0G
10 AIRCRAFT	MEAN	301.71	91.54	9.41	1.92
1921 HOURS	STD DEV	101.45	55.09	7.42	2.85
	SKEWNESS	.63	1.27	1.77	2.18

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-6C
----

12 AIRCRAFT   7282 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
12 AIRCRAFT	MEAN	960.17	311.66	15.27	.89
6983 HOURS	STD DEV	460.22	159.61	13.07	.77
	SKEWNESS	-.10	-.38	.37	.36

	COMBAT	4.0G	5.0G	6.0G	7.0G
3 AIRCRAFT	MEAN	581.03	302.66	58.59	9.70
299 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL A-7H
----

41 AIRCRAFT   460 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
41 AIRCRAFT	MEAN	438.02	183.86	16.92	3.87
460 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL KC-130F
----

12 AIRCRAFT   17648 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
12 AIRCRAFT	MEAN	6.76	.42	.08	.00
17648 HOURS	STD DEV	5.79	.51	.22	.00
	SKEWNESS	-.38	.30	1.82	.00

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL AF-1E
----

21 AIRCRAFT   4527 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
21 AIRCRAFT MEAN	563.04	125.53	22.27	3.60
4527 HOURS STD DEV	200.25	52.92	16.14	4.72
SKEWNESS	.29	.61	1.63	2.00

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA

MODEL F-4A
----

27 AIRCRAFT   17193 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
27 AIRCRAFT	MEAN	794.95	261.01	66.29	11.89
17193 HOURS	STD DEV	275.55	127.26	42.65	8.70
	SKEWNESS	.09	.33	.71	1.19

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL TF-4A
----

4 AIRCRAFT   433 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
4 AIRCRAFT	MEAN	135.48	23.72	3.32	.00
433 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-4B
----

611 AIRCRAFT   871204 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
573 AIRCRAFT	MEAN	1918.80	666.05	190.93	46.54
452278 HOURS	STD DEV	1116.51	507.34	211.25	75.16
	SKEWNESS	1.84	2.14	3.28	5.39

	COMBAT	4.0G	5.0G	6.0G	7.0G
291 AIRCRAFT	MEAN	1137.73	405.31	129.20	31.32
108405 HOURS	STD DEV	372.90	132.70	67.31	31.02
	SKEWNESS	2.98	1.94	4.10	8.73

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
336 AIRCRAFT	MEAN	2308.28	749.06	184.98	40.80
203787 HOURS	STD DEV	1197.25	522.21	193.15	60.69
	SKEWNESS	1.25	1.61	2.08	3.35

	COMBAT	4.0G	5.0G	6.0G	7.0G
226 AIRCRAFT	MEAN	2221.18	864.39	225.90	47.53
106735 HOURS	STD DEV	695.10	341.03	155.65	51.23
	SKEWNESS	1.47	1.22	2.23	4.40

MODEL F-6A   ALL DATA
----

46 AIRCRAFT   17986 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
29 AIRCRAFT	MEAN	190.91	25.88	1.99	.20
12399 HOURS	STD DEV	143.14	29.94	2.18	.75
	SKEWNESS	2.41	2.60	1.96	2.92

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
26 AIRCRAFT	MEAN	147.15	17.74	.53	.00
5587 HOURS	STD DEV	32.97	7.42	.68	.00
	SKEWNESS	1.24	.80	2.11	.00

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-8A
----

48 AIRCRAFT   33043 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
48 AIRCRAFT	MEAN	678.64	171.70	32.28	5.44
33043 HOURS	STD DEV	330.20	100.28	22.83	4.33
	SKEWNESS	.32	.50	.75	1.38

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL RF-8A
----

28 AIRCRAFT   20290 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
23 AIRCRAFT	MEAN	317.32	80.22	13.37	2.05
15203 HOURS	STD DEV	120.58	36.11	7.56	1.88
	SKEWNESS	.56	.52	.61	1.90

	COMBAT	4.0G	5.0G	6.0G	7.0G
4 AIRCRAFT	MEAN	221.00	34.00	5.73	5.73
355 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
10 AIRCRAFT	MEAN	151.04	28.24	4.41	.56
4726 HOURS	STD DEV	49.30	13.23	3.03	.99
	SKEWNESS	-.68	.20	.42	1.68

	COMBAT	4.0G	5.0G	6.0G	7.0G
1 AIRCRAFT	MEAN	.00	.00	.00	.00
6 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

ALL DATA

MODEL TF-8A
----

30 AIRCRAFT   4924 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
30 AIRCRAFT	MEAN	1274.72	393.67	82.63	14.88
4924 HOURS	STD DEV	354.70	139.02	33.41	6.09
	SKEWNESS	.88	2.10	2.48	.98

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-8B
----

53 AIRCRAFT   40015 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G

46 AIRCRAFT	MEAN	813.00	203.68	34.52	3.65
29272 HOURS	STD DEV	316.12	100.90	23.43	3.94
	SKEWNESS	.99	1.13	1.73	2.98

COMBAT	4.0G	5.0G	6.0G	7.0G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G

36 AIRCRAFT	MEAN	778.09	148.63	19.24	2.49
10743 HOURS	STD DEV	188.70	53.00	9.18	2.34
	SKEWNESS	1.26	1.68	1.46	2.06

COMBAT	4.0G	5.0G	6.0G	7.0G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-8C
----

87 AIRCRAFT   76054 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
78 AIRCRAFT	MEAN	875.42	217.67	38.78	4.89
53012 HOURS	STD DEV	534.39	164.74	37.06	6.76
	SKEWNESS	1.20	1.14	1.60	2.57

	COMBAT	4.0G	5.0G	6.0G	7.0G
11 AIRCRAFT	MEAN	848.92	194.84	49.77	6.46
1689 HOURS	STD DEV	575.01	119.04	27.36	6.78
	SKEWNESS	.22	.30	.17	1.45

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
37 AIRCRAFT	MEAN	1217.83	346.89	67.32	10.17
20851 HOURS	STD DEV	370.14	107.60	22.36	4.73
	SKEWNESS	1.83	1.83	1.66	.05

	COMBAT	4.0G	5.0G	6.0G	7.0G
11 AIRCRAFT	MEAN	748.69	333.97	61.52	9.71
502 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

ALL DATA

MODEL F-8D
----

101 AIRCRAFT   70988 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
93 AIRCRAFT	MEAN	1176.54	326.40	68.29	11.47
49588 HOURS	STD DEV	490.92	154.19	37.61	7.70
	SKEWNESS	.55	.48	.72	1.25

	COMBAT	4.0G	5.0G	6.0G	7.0G
15 AIRCRAFT	MEAN	1380.67	394.15	107.24	22.87
1060 HOURS	STD DEV	468.87	79.59	21.81	6.83
	SKEWNESS	2.59	.29	.19	.71

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
46 AIRCRAFT	MEAN	826.64	216.72	45.39	8.03
19583 HOURS	STD DEV	398.11	118.51	30.75	5.85
	SKEWNESS	.83	.90	1.13	1.50

	COMBAT	4.0G	5.0G	6.0G	7.0G
11 AIRCRAFT	MEAN	546.18	88.42	8.42	4.32
758 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

ALL DATA

MODEL F-8E
----

248 AIRCRAFT   198601 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
243 AIRCRAFT	MEAN	1994.36	610.43	131.38	19.66
125946 HOURS	STD DEV	717.23	205.58	53.09	11.45
	SKEWNESS	1.87	1.50	1.62	2.23

	COMBAT	4.0G	5.0G	6.0G	7.0G
103 AIRCRAFT	MEAN	1074.97	372.62	92.68	17.22
27936 HOURS	STD DEV	193.19	101.22	41.20	15.20
	SKEWNESS	.06	.97	3.20	5.50

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
88 AIRCRAFT	MEAN	1551.79	453.60	92.16	15.17
26217 HOURS	STD DEV	451.22	138.34	35.57	9.01
	SKEWNESS	.49	.04	.50	1.61

	COMBAT	4.0G	5.0G	6.0G	7.0G
52 AIRCRAFT	MEAN	1334.99	460.44	118.91	19.35
18501 HOURS	STD DEV	373.38	123.04	28.68	8.02
	SKEWNESS	3.39	.45	.60	1.58

ALL DATA

MODEL DF-8F
----

13 AIRCRAFT   9599 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

13 AIRCRAFT MEAN   405.48   91.31   11.23   .82

9599 HOURS   STD DEV   271.17   85.23   15.41   1.65

             SKEWNESS   .49   .76   1.93   1.35

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT   MEAN   *   *   *   *

0 HOURS   STD DEV   *   *   *   *

             SKEWNESS   *   *   *   *

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT   MEAN   *   *   *   *

0 HOURS   STD DEV   *   *   *   *

             SKEWNESS   *   *   *   *

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT   MEAN   *   *   *   *

0 HOURS   STD DEV   *   *   *   *

             SKEWNESS   *   *   *   *

ALL DATA

MODEL F-8H
----

87 AIRCRAFT   85490 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
87 AIRCRAFT MEAN	1664.03	519.64	101.80	13.61
72270 HOURS STD DEV	557.82	191.35	46.31	9.47
SKEWNESS	.36	.78	.74	1.31

COMBAT	4.0G	5.0G	6.0G	7.0G
45 AIRCRAFT MEAN	711.67	197.56	41.43	6.17
13220 HOURS STD DEV	254.48	82.47	19.81	4.49
SKEWNESS	2.35	2.77	2.28	1.32

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA

MODEL F-8J
----

134 AIRCRAFT   128071 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
134 AIRCRAFT	MEAN	2136.29	647.37	121.76	15.13
100977 HOURS	STD DEV	726.37	267.49	63.60	18.24
	SKEWNESS	.89	.70	1.18	6.90

	COMBAT	4.0G	5.0G	6.0G	7.0G
93 AIRCRAFT	MEAN	769.47	258.14	55.15	8.35
27094 HOURS	STD DEV	318.22	138.06	35.52	9.12
	SKEWNESS	2.48	2.94	2.90	3.75

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-8K
----

74 AIRCRAFT   41773 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
	--------	----	----	----	----
74 AIRCRAFT	MEAN	1659.73	518.96	111.98	13.66
41660 HOURS	STD DEV	745.33	247.92	60.18	9.15
	SKEWNESS	1.63	2.37	3.61	1.41

	COMBAT	4.0G	5.0G	6.0G	7.0G
	------	----	----	----	----
3 AIRCRAFT	MEAN	4194.50	1576.92	208.63	24.88
113 HOURS	STD DEV	**	**	**	**
	SKEWNESS	**	**	**	**

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
	--------	----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
	------	----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL F-8L
----

36 AIRCRAFT   9856 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
36 AIRCRAFT	MEAN	1711.41	498.06	122.95	19.19
9856 HOURS	STD DEV	427.64	204.07	66.52	13.14
	SKEWNESS	.81	.84	1.31	1.17

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL DF-8L
----

5 AIRCRAFT   2081 HOURS

NAVY

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

5 AIRCRAFT	MEAN	657.85	168.35	25.46	2.33
2081 HOURS	STD DEV	217.60	54.39	8.30	2.57
	SKEWNESS	-.29	-.40	-.08	.77

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

TRAINING	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	4.0G	5.0G	6.0G	7.0G
	----	----	----	----

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL EF-10B
----

16 AIRCRAFT   9853 HOURS

NAVY

TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	3.0G	4.0G	5.0G	6.0G
14 AIRCRAFT MEAN	16.24	.00	.00	.00
7526 HOURS STD DEV	10.06	.00	.00	.00
SKEWNESS	-.59	.00	.00	.00

COMBAT	3.0G	4.0G	5.0G	6.0G
10 AIRCRAFT MEAN	45.06	2.22	.00	.00
2327 HOURS STD DEV	20.68	4.09	.00	.00
SKEWNESS	2.16	2.52	.00	.00

ALL DATA

MODEL F-11A
----

36 AIRCRAFT   22538 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
36 AIRCRAFT	MEAN	2796.39	593.37	80.02	10.38
22538 HOURS	STD DEV	916.87	259.16	60.36	10.36
	SKEWNESS	1.30	1.37	3.46	3.50

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL WP-3A
----

4 AIRCRAFT   10059 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
		----	----	----	----
4 AIRCRAFT	MEAN	2.65	.11	.11	.00
10059 HOURS	STD DEV	1.56	.30	.30	.00
	SKEWNESS	.31	.62	.62	.00

	COMBAT	2.0G	2.5G	3.0G	3.5G
		----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
		----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
		----	----	----	----
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL S-2D
----

67 AIRCRAFT   59015 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G
67 AIRCRAFT MEAN	33.25	7.71	1.77	.74
58445 HOURS STD DEV	34.30	9.23	5.36	4.85
SKEWNESS	1.72	1.98	6.51	7.25

COMBAT	2.0G	2.5G	3.0G	3.5G
8 AIRCRAFT MEAN	25.35	2.10	.00	.00
570 HOURS STD DEV	**	**	**	**
SKEWNESS	**	**	**	**

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

ALL DATA

MODEL S-2E
----

230 AIRCRAFT   598341 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
230 AIRCRAFT	MEAN	71.20	12.72	2.91	1.05
569460 HOURS	STD DEV	265.44	42.40	7.19	3.56
	SKEWNESS	5.23	8.57	2.30	2.56

	COMBAT	2.0G	2.5G	3.0G	3.5G
65 AIRCRAFT	MEAN	40.67	7.47	1.14	.42
28881 HOURS	STD DEV	67.96	7.95	1.70	1.33
	SKEWNESS	5.07	2.05	2.66	5.00

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	2.0G	2.5G	3.0G	3.5G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL S-2G
----

48 AIRCRAFT   56173 HOURS

NAVY

TRAINING	2.0G	2.5G	3.0G	3.5G

48 AIRCRAFT	MEAN	48.11	7.97	2.54	1.27
56173 HOURS	STD DEV	117.63	14.88	6.79	3.89
	SKEWNESS	5.18	2.04	2.57	2.71

COMBAT	2.0G	2.5G	3.0G	3.5G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

TRAINING	2.0G	2.5G	3.0G	3.5G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

COMBAT	2.0G	2.5G	3.0G	3.5G

0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL T-2A
----

147 AIRCRAFT   584869 HOURS

NAVY

	TRAINING	4.0G	5.0G	6.0G	7.0G
147 AIRCRAFT	MEAN	591.14	44.72	4.84	.89
584869 HOURS	STD DEV	446.55	58.91	6.48	2.09
	SKEWNESS	.74	1.99	1.83	2.81

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	4.0G	5.0G	6.0G	7.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL T-2B
----

90 AIRCRAFT   155182 HOURS

NAVY

	TRAINING	5.0G	6.0G	7.0G	8.0G
90 AIRCRAFT	MEAN	215.91	24.27	2.51	.38
155182 HOURS	STD DEV	244.44	38.78	4.09	.79
	SKEWNESS	3.00	3.71	3.42	1.63

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	5.0G	6.0G	7.0G	8.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL T-28C
----

51 AIRCRAFT   180050 HOURS

NAVY

	TRAINING	3.0G	4.0G	5.0G	6.0G
51 AIRCRAFT	MEAN	1011.53	129.84	7.52	.52
180050 HOURS	STD DEV	1170.42	176.91	11.43	1.58
	SKEWNESS	-.02	.41	1.06	3.27

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

MARINE

	TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

	COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT	MEAN	*	*	*	*
0 HOURS	STD DEV	*	*	*	*
	SKEWNESS	*	*	*	*

ALL DATA

MODEL T-34B
----

77 AIRCRAFT   202447 HOURS

NAVY

TRAINING	3.0G	4.0G	5.0G	6.0G
77 AIRCRAFT MEAN	1376.68	204.45	19.49	1.05
202447 HOURS STD DEV	1496.15	246.86	24.66	4.43
SKEWNESS	.04	.40	.83	7.06

COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

MARINE

TRAINING	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

COMBAT	3.0G	4.0G	5.0G	6.0G
0 AIRCRAFT MEAN	*	*	*	*
0 HOURS STD DEV	*	*	*	*
SKEWNESS	*	*	*	*

APPENDIX B

THE DETERMINATION OF SAMPLE STATISTICS
FOR COUNTING ACCELEROMETER DATA

APPENDIX B

Subj: The Determination of Sample Statistics for Counting Accelerometer Data

Ref: (a) Browlee, K.A., "Statistical Theory and Methodology in Science and Engineering," Wiley 1965, pp. 358-359
      (b) Dixon & Massey, Introduction to Statistical Analysis, McGraw-Hill, Second Edition, 1957, pp. 194-195

1. The purpose of this appendix is to describe the methods used at NAVAIRDEVCEN in calculating statistics describing counting accelerometer data. The subsequent outlined sequence is repeated for each aircraft model, for each mission category, and for each g-level where there is sufficient data.

2. These are the methods used for determining sample statistics. Consider a scatter diagram of cumulative counts (at any g-level) vs. flight hours,

Cumulative Counts

Figure 1
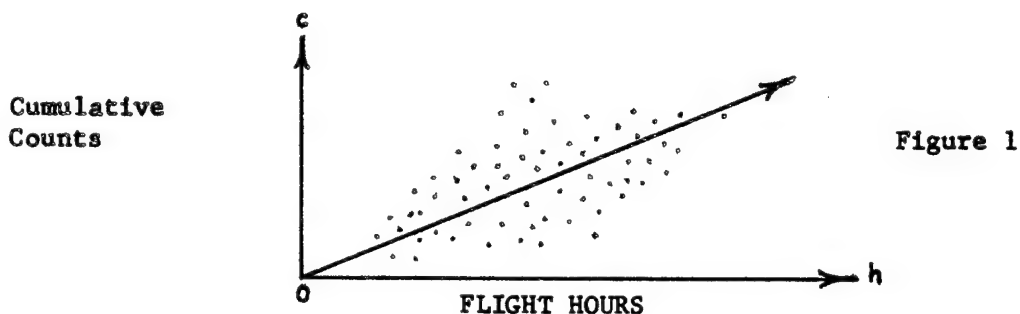
FLIGHT HOURS

where each dot represents the cumulative counts and flight hours accrued by an individual serial number which is flying or has flown.

Let h_i be the total quality control accepted flight hours for the ith plane (i=1, 2----N)

Let c_i be the cumulative counts during the h_i hours for the ith plane (i=1, 2----N)

N is the total number of aircraft of this model and mission category for which there is recorded information.

Then

(1) $b = \dfrac{\sum\limits_{i=1}^{N} c_i h_i}{\sum\limits_{i=1}^{N} h_i^2}$ where b is slope of line (Figure 1) through origin fitted by least squares.

(2) $\bar{x} = 1000b$ estimated mean load exceedances at 1000 hours

(3) $\quad \bar{h} = \dfrac{\sum\limits_{i=1}^{N} h_i}{N} \quad$ average flight hours

(4) $\quad \hat{\sigma}_{ch}^{2} = \dfrac{\sum\limits_{i=1}^{N} (c_i - bh_i)^2}{N-1} \quad$ estimator of the population standard error squared of the regression

$\quad \hat{\sigma}_{ch} = \sqrt{\hat{\sigma}_{ch}^{2}} \quad$ estimator of the population standard error of the regression

(5) $\quad S = \sqrt{1000\, \hat{\sigma}_{ch}^{2}\big/\bar{h}} \quad$ estimated standard deviation (counts at 1000 hours) of the load exceedances for each g-level

(6) $\quad A_3 = \dfrac{\sum\limits_{i=1}^{N} (c_i - bh_i)^3}{N\, \hat{\sigma}_{ch}^{3}} \quad$ estimated skewness

3. The following is the explanation and justification for these methods:

Aircraft which do not have any flight hours must have zero counts; therefore, the line in figure 2 must go through (0,0). Brownlee (reference (a)) describes the methods for fitting a least squares line through the origin (0,0). The slope of this line is the estimated mean exceedance rate (per hour). Multiplying this rate by 1000 will result in exceedances at 1000 hours (equation (2)). Multiplying b by any other h number of hours will result in mean exceedances at h hours.

If the data in figure 1 were separated into flight hour intervals (see figure 2) and the standard error in each interval were plotted against average flight hours (see figure 3) in that interval, the resultant curve is assumed to have the square root functional form.* Due to limitations in sample size, these individual σ's could not be determined accurately; thus, it was necessary to calculate a single $\hat{\sigma}_{ch}$ for all h combined and apply it at $\bar{h}$.** Equation (5) uses figure 3 to convert $\hat{\sigma}_{ch}$ at $\bar{h}$ to S at 1000 hours.

---

* This is partially justified by the fact that the variance of a sum of independent random variables is equal to the sum of the independent variances. Unreported statistical tests performed at NAVAIRDEVCEN show that figure 3 is a reasonable fit to actual data. It should be noted that the σ's in figure 2 are estimated by equation (4), but each $\hat{\sigma}$ was calculated using the data points in the respective interval.

**The estimated standard error $\hat{\sigma}_{ch}$ is used as the standard error of estimate for a hypothetical distribution of planes all having $\bar{h}$ hours. This follows from work in reference (b).

c

Cumulative
Counts

$\hat{\sigma}$ $\hat{\sigma}$ $\hat{\sigma}$ $\hat{\sigma}$

0   Flight Hours   h

FIGURE 2

$\hat{\sigma}$

$\hat{\sigma} = K\sqrt{h}$

Standard
Error

FIGURE 3

0          $\bar{h}$ 1000   h

Flight Hours
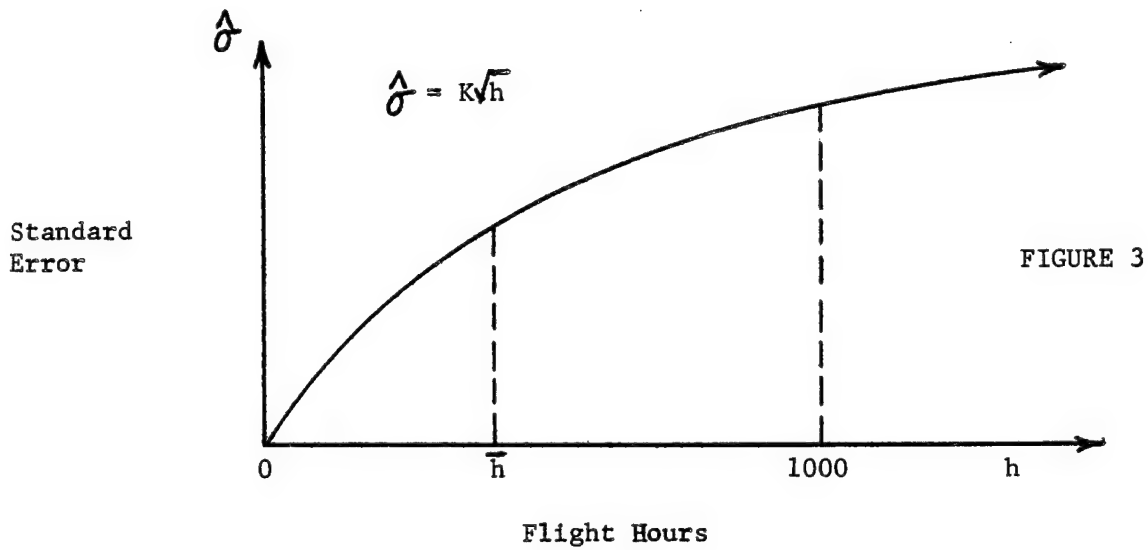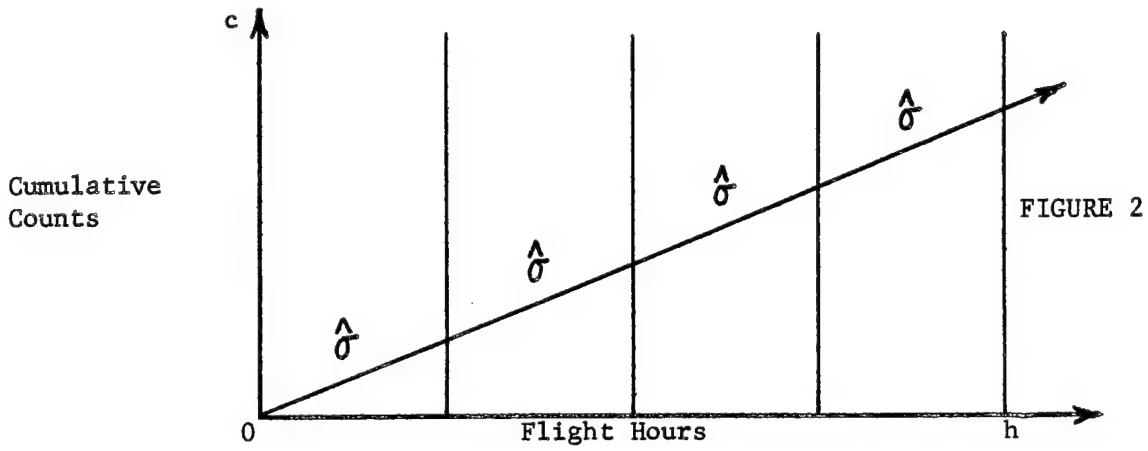
If one wanted the standard error at some other value of hours h, he would simply replace 1000 in equation (5) by that value of hours h, and the appropriate standard error would result.

Skewness A_3 is computed in equation (6). This measure indicates whether more airplane load exceedances are above the mean line or below the mean line. If:

$A_3 < 0$ More load exceedances are above mean line than below

$A_3 = 0$ Equal number of load exceedances above and below mean

$A_3 > 0$ More load exceedances are below mean line than above

(Strictly speaking a distribution is symmetrical only if all its odd moments are zero; however, the above statement is approximately true.)

4. For ease of computation, equation (4) can be expanded as follows:

$$(N-1)\, \hat{\sigma}^2_{ch} = \sum_{i=1}^{N} (c_i - bh_i)^2$$

$$(N-1)\, \hat{\sigma}^2_{ch} = \sum_{i=1}^{N} (c_i^2 - 2bc_i h_i + b^2 h_i^2)$$

$$(7)\quad (N-1)\, \hat{\sigma}^2_{ch} = \sum_{i=1}^{N} c_i^2 - 2b \sum_{i=1}^{N} c_i h_i + b^2 \sum_{i=1}^{N} h_i^2$$

but

$$b = \frac{\sum_{i=1}^{N} c_i h_i}{\sum_{i=1}^{N} h_i^2}$$

and (7) can be reduced to

$$(N-1)\, \hat{\sigma}^2_{ch} = \sum_{i=1}^{N} c_i^2 - 2b \sum_{i=1}^{N} c_i h_i + b \frac{\sum_{i=1}^{N} c_i h_i \sum_{i=1}^{N} h_i^2}{\sum_{i=1}^{N} h_i^2}$$

then

$$(8)\quad \hat{\sigma}^2_{ch} = \left[\sum_{i=1}^{N} c_i^2 - b \sum_{i=1}^{N} c_i h_i \right] \Big/ (N-1)$$

Equation (8) will be used in lieu of equation (4) in determining $\hat{\sigma}^2_{ch}$.

5. An example using training Navy data, 12 airplanes 4.0G level:

Number	Counts (c_i)	Hours (h_i)
1	1567	1341.7
2	649	618.2
3	1114	1100.8
4	5	27.3
5	768	691.7
6	23	139.6
7	396	555.1
8	718	831.3
9	854	839.1
10	536	695.4
11	910	775.3
12	160	233.0

The following are tabulated:

$$\sum_{i=1}^{N} h_i = 7848.5$$

$$\sum_{i=1}^{N} c_i = 7700$$

$$\sum_{i=1}^{N} c_i h_i = 6913341.6$$

$$\sum_{i=1}^{N} h_i^2 = 6735017.87$$

$$\sum_{i=1}^{N} c_i^2 = 7250716.00$$

$$\sum_{i=1}^{N} (c_i - bh_i)^3 = -7082690$$

and are used in the following equations:

(1) $b = \dfrac{6913341.6}{6735017.87} = 1.02647$ cts. per hr.

(2) $\bar{x} = 1000 \ (1.02647) = 1026.47$ cts. at 1000 hours

(3) $\bar{h} = \dfrac{7848.5}{12} = 654.04$ hours

(4) $\hat{\sigma}_{ch}^2 = \dfrac{7250716 - 1.02647 \ (6913341.6)}{11} = 14034 \qquad \hat{\sigma}_{ch} = 118.5$

(5) $S = \sqrt{1000 \ (14034)/654} = 146.46$ cts. at 1000 hours

(6) $A_3 = \dfrac{-7082690}{12 \ (118.5)^3} = -.36$

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